



ADVANCING THE TECHNICAL DEVELOPMENT, PRODUCTION, PROCESSING AND APPLICATION OF IRON AND STEEL

DOE Regional Clean Hydrogen Hubs Implementation Strategy
AIST Statement of Support
20 July 2022

As a highly engineered material, steel has been identified by the Biden Administration as a critical industry of the future. In addition to its foundational role for the economic and defensive security of our nation, steel provides solutions for the growth of modern society as the cost-efficient, sustainable material of choice for infrastructure, transportation, power generation, energy transport, storage and many other applications.

The steel industry represents a strong partner for all Hydrogen Hub activity. Clean hydrogen energy will need clean steel, and clean steel will benefit from clean energy; these industries are interdependent. Steel products will play a crucial role in the viability of the hydrogen economy as each Hydrogen Hub will need significant amounts of sustainable domestic steel for its reactors, storage vessels, and pipelines.

In addition to supplying materials for the hydrogen economy, the iron and steel industry has the potential to consume vast amounts of hydrogen energy in the future to reduce carbon emissions. Analysis completed by [Mission Possible Partnership](#) suggests production technologies using 100% green hydrogen could be responsible for 40%–55% of primary steel production in 2050, utilizing 35–55 Mtpa of zero-emissions hydrogen. However, the current supply of clean hydrogen in the U.S. is insufficient for meaningful fuel replacement in the iron and steel industry.

Transcending the Hydrogen Hub activity, the development of public/private partnerships with American steel producers could facilitate the commercial transition of innovative decarbonization technologies into scalable, cost-effective and high-performing solutions for all manufacturing sectors. These solutions have the capacity to advance U.S. efforts towards the Administration’s climate goals of net-zero carbon emissions, economy-wide, by 2050.

The non-profit Association for Iron & Steel Technology (AIST), headquartered near Pittsburgh, PA, is supportive of decarbonization efforts by iron and steel producers in the U.S. AIST brings more than 15,000 steel manufacturing experts from across a network of industrial stakeholders, including major universities and DOE National Laboratories engaged in steel research. This network is bolstered by representation from the American Iron and Steel Institute (AISI) and the Steel Manufacturers Association (SMA), both headquartered in Washington, DC. AIST is available to offer industry-wide technical support to advance the evolution of Hydrogen Hub activity towards a clean energy future and to serve as an administrative body for additional public/private partnership needs.

The U. S. steel industry is vital to the grand challenge of industrial decarbonization. Therefore, AIST encourages DOE to continue to prioritize work with the American iron and steel industry in decarbonization initiatives, including but not limited to, commercially viable and industrial-scale clean hydrogen applications and implementation.

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